

**Appendix 2**

Amendments to pending claims: mark-up copy (37 C.F.R. §1.121(c)(1)(ii)).

Please cancel claims 1, 3-4, 6-7, 9, and 34-36 without prejudice or disclaimer of the subject matter expressed therein.

Please amend claims 2, 5, and 8 as follows:

2. (Once amended) A method of cooling a surface by nucleate boiling, comprising:

polishing said surface;

photo etching said surface to obtain a predetermined minimum surface density of discrete nucleation sites having a conical cross-section tapering to at least a minimum predetermined depth;

immersing said surface in a refrigerant having a preselected boiling point so that said nucleation sites become substantially flooded by said refrigerant; and

permitting said surface to heat up to a temperature of at least said preselected boiling point, said heating initiating nucleate boiling of said refrigerant without a temperature overshoot on the initial ascent [The method of claim 1],

wherein said conical cross-section has a cavity cone

angle,  $\theta$ , which is greater than the liquid contact angle,  $\gamma$ , of said refrigerant.

5. (Once amended) The method of claim 2 [1], wherein said refrigerant has a liquid contact angle of less than about  $5^\circ$ .

8. (Once amended) The method of claim 2 [1], wherein said nucleate boiling initiates with a reversal of trend of less than about  $2^\circ\text{C}$ .

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